

I wanted to share some thoughts about the book *CHAOS: Making a New Science* (see Editorial this issue). Several times, lately, I have awakened in the night with the thought of a new area where the science of Chaos comes into play.

The idea of order without periodicity is intuitively what the Park Service has been preaching in many of its vegetative and wildlife management strategies. Hardly a field has not been impacted by the study of chaotic behavior.

A Los Alamos resident, Gottfried Mayer-Kress, is in high demand by the military for his assertion that nations can be described mathematically as non-linear systems, and minor perturbations (such as the deployment of a particular weapons system) could lead to something as drastic as nuclear war. His last paper, published this year in *Nature*, was entitled "Chaos in the International Arms Race," which led me to remember the Falkland Island war, where a cheap, hand-held shoulder-fired rocket shot down several sophisticated multimillion dollar Harrier aircrafts.

The implications for biologists that there is order without periodicity are profound. We have always known that little happenings may have staggering long-term effects but to realize that all systems ultimately oscillate around so called "strange attractors" is to find insight into plant succession, animal populations, and life itself.

The Heisenberg Uncertainty principle tells me that by the very act of measuring, I change the behavior of the subject. Einstein tells me that I can know either where I am or what my velocity is – but not both. Now Gleick tells me that I can predict, within limits, where I will be but not how I will get there.

Mind candy – isn't it yummy??!

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